APPENDIX B

1. A method of making a set of labeled compounds, by the use of a support and a set of labels, said method comprising the steps of:

a) at least one first or intermediate step comprising dividing the support into lots, performing a different chemical reaction on each lot of the support so as either to modify that lot of the support or to couple a chemical moiety to that lot of the support, tagging a fraction of each lot of the support with a different label, and combining said lots of the support, and

b) at least one intermediate or final step comprising dividing the support into lots, performing a different chemical reaction on each lot of the support, so as either to modify that lot of the support or to couple a chemical moiety to that lot of the support, tagging a fraction of each lot of the support with a different cleavable label, whereby each different cleavable label is linked to a chemical moiety coupled to the support in a different step and forms with that chemical moiety a labeled compound which is separable from the support, and combining the said lots of the support.

2. The method of claim 1, wherein the support is a particulate solid support.

3. The method of claim 1, wherein step b) is performed to couple the chemical moiety to a chemical moiety previously coupled to the support.

4. The method of claim 3, wherein the chemical moieties are monomer units and the labeled compounds are oligomers.

5. The method of claim 4, wherein the set of labeled compounds is a library of n^s oligomers, wherein the n is the number of different monomer units and the s is the number of monomer units in each labeled oligomer, wherein step a) is performed once to couple a different monomer unit to each of the support, and step b) is performed s-1 times.

6. The method of claim 5, wherein the set of labeled compounds contains n x s different labels.

7. The method of claim 1, wherein each labeled compound comprises a single label and at least one chemical moiety.

8. The method of claim 1, wherein the support is treated to release said labeled compounds into solution.

9. The method of claim 1, wherein from 0.25% to 25% of each lot of the support is tagged in each step with a different label.

10. The method of claim 1, wherein the support has cleavable linkers, wherein each cleavable linker has at least one group for chemical synthesis and another group for labeling.

12. The method of claim 1, wherein each label is a group of formula $R^1R^2R^3C$-, where R^1, R^2 and R^3 are the same or different and each is a monocyclic or fused ring aromatic group that is substituted or unsubstituted.

13. The method of claim 12, wherein at leas one of R^1, R^2, and R^3 carries a substituent selected from C1-C20 alkoxy and hydrocarbyl either unsubstituted by carboxylic acid, sulphonic acid, nitro, cyano, hydroxyl, thiol, primary, secondary, or tertiary amino, primary or secondary amido, anhydride, carbonyl halide, or active ester.

14. The method of claim 1, wherein the labeled compounds are labeled oligonucleotides.

15. A set of labeled compounds wherein a molecule of a compound of the set is tagged with a single cleavable label which identifies the nature and/or the position of a component of that molecule, and different molecules of the same compound are tagged with different labels.

16. The set of claim 15, wherein the labeled compounds are releasable attached to a solid support.

17. The set of claim 16, wherein the solid support is particulate.

18. The set of claim 15, wherein the labeled compounds are mixed together in solution.

19. The set of claim 15, wherein the label is cleaved to give a charged species for mass spectrometry.

20. The set of claim 15, wherein each label is a group of formula $R^1R^2R^3C$-, where R^1, R^2 and R^3 are the same or different and each is a monocyclic or fused ring aromatic group that is substituted or unsubstituted

21. The set of claim 20, wherein at least one of R^1, R^2 and R^3 carries a substituent selected from C_1- C_{20} alkoxy or hydrocarbyl either unsubstituted or substituted by carboxylic acid, sulphonic acid, nitro, cyano, hydroxyl, thiol, primary, secondary or tertiary amino, primary or secondary amido, anhydride, carbonyl halide or active ester.

22. The set of claim 15, wherein the labeled compounds are labeled oligonucleotides.

23. A library consisting of the set of labeled compounds of claim 19.

42. The method of claim 12, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

43. The set of claim 20, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

59. The method of claim 13, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

60. The method of claim 35, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

61. The method of claim 36, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

62. The set of claim 21, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

66. The compound of claim 42, wherein $R^1R^2R^3C$- is a substituted monomethoxytrityl group.

67. A library consisting of the set of labeled compounds of claim 20.

68. A library consisting of the set of labeled compounds of claim 21.

69. A library consisting of the set of labeled compounds of claim 22.